CLAIMS

We Claim:

1. An anchor to inhibit rotation of a device relative to an oil well casing, comprising:

a tubular mandrel adapted for direct or indirect connection to the device;

a cylindrical housing to receive at least a portion of said mandrel concentrically therethrough, said housing being rotatable relative to said mandrel and having a plurality of circumferentially spaced apart apertures formed in an outer surface thereof;

a plurality of spaced apart anchoring slips disposed between said housing and said mandrel in registry with respective ones of said apertures in said housing's outer surface;

first biassing means associated with said mandrel for rotation therewith in the clockwise or counterclockwise directions to engage and then move respective ones of said anchoring slips radially towards and then into temporarily anchoring contact with the casing to prevent further rotation of said mandrel and the device connected thereto in either of said clockwise or counterclockwise directions; and

one or more drag block means disposed in said housing in registry with respective ones of said apertures in said housing's outer surface to extend radially outwardly therefrom, each of said drag block means being normally biassed into frictional contact with said casing to inhibit rotation of said housing relative to the casing.

2. The anchor of claim 1, wherein said first biassing means comprise spaced apart raised areas extending radially above an outer surface of said mandrel.

3. The anchor of claim 1, wherein said anchoring slips are generally cylindrical with an axial bore formed therethrough, said slips having an outer surface with a plurality of teeth disposed circumferentially thereabout.

4. The anchor of claim 3, wherein said raised areas have a plurality of teeth thereon adapted to drivingly engage said teeth on said anchor slips.

5. The anchor of claim 4, including a spindle member extending through said axial bore in each said anchor slip, said anchor slips being freely rotatable about said spindles.

6. The anchor of claim 5, wherein the ends of each said spindle are retained in said housing for up and down movement of said anchor slips towards and away from the casing in response to rotation of said mandrel and said raised areas thereon.

7. The anchor of claim 6, wherein said teeth on said raised areas rotate said teeth on said anchor slip into biting contact with the well casing to prevent further rotation of said anchor slips and hence of said mandrel and said device connected thereto.

8. The anchor of claim 7, wherein said raised areas are longitudinally extending lobes equi-spaced about the circumference of said mandrel.

9. The anchor of claim 8, wherein said teeth on said anchor slips and said teeth on said lobes are longitudinally coextensive.

10. The anchor of claim 9, wherein the surface of said mandrel between said lobes includes teeth for drivingly engaging said teeth on said anchor slips, said teeth peaking below said outer surface of said mandrel to facilitate movement of said anchor slips deeper into said housing and away from the casing when said slips are not biassed into contact therewith.

11. A torque anchor for use in an oil well to temporarily prevent rotation of a device connected to the anchor in the clockwise or counterclockwise directions, or both, comprising:

a tubular mandrel operatively connected to the device to be anchored;

a plurality of casing gripping anchor members disposed in spaced apart relationship about the circumference of said mandrel;

a housing mounted concentrically around at least a portion of said mandrel to be rotatable thereon and to at least partially contain said anchor members therein, said anchor members being mounted in said housing for rotation therewith around the mandrel and for radial movement towards and away from said mandrel;

cam means on said mandrel for operatively engaging respective ones of said anchor members to bias them towards and into gripping contact with said casing upon rotation of said mandrel in one direction, and to operatively engage another of said anchor members upon rotation of said mandrel in the opposition direction, whereby gripping of the casing by said anchor members effectively stops the rotation of said mandrel; and

a plurality of friction members supported by said housing normally biassed into contact with the casing to stop rotation of said housing relative to the casing.

12. The torque anchor of claim 11, wherein said anchor members are cylindrical slips having teeth on an outer surface thereof for gripping contact with the casing.

13. The torque anchor of claim 12, wherein said cam means have teeth thereon for drivingly engaging said teeth on said slips.

14. The torque anchor of claim 13, wherein said cylindrical slips each have a bore formed therethrough for a spindle member about which said slips are freely rotatable.

15. The torque anchor of claim 14, wherein said housing includes grooves therein to receive the ends of respective ones of said spindle members for up and down movement of said spindles towards and away from said mandrel.

16. The torque anchor of claim 15, wherein said friction members comprise metallic drag blocks received into respective recesses formed in said housing.

17. The torque anchor of claim 16, wherein said drag blocks are biassed into contact with the casing by means of resilient members disposed in said recesses between said housing and respective ones of said drag blocks.

18. The torque anchor of claim 17, wherein said resilient members are springs.

19. The torque anchor of claim 17, wherein said teeth on said cylindrical slips are adapted to bite into the casing for anchoring contact therewith.

20. The torque anchor of claim 11, wherein said cam means comprise raised lobes extending in the longitudinal direction of said mandrel.

21. The torque anchor of claim 20, wherein said lobes and said teeth thereon are formed integrally with said mandrel.

22. The torque anchor of claim 20, wherein said teeth on said cylindrical slips extend in the longitudinal direction of said slips to be substantially coextensive with said teeth on said lobes.

23. The torque anchor of claim 22, wherein said housing comprises a cylindrical sleeve and removeable end caps for closing the area between said mandrel and said sleeve.

24. The torque anchor of claim 23, wherein the surface of said mandrel between said lobes includes additional teeth adapted to drivingly engage said teeth on said anchor slips.

25. A method for anchoring a device against rotation in a well bore, comprising the steps of:

a) non-rotatably connecting the device to a mandrel disposed either above or below the device; and,

b) surrounding at least a portion of the mandrel with a cylindrical housing that is rotatable relative to said mandrel, said housing having associated therewith a first set of anchor members normally biassed into frictional contact with the well bore to hold the housing stationary relative thereto, and a second set of anchor members actuatable in response to rotation of said mandrel for movement between a first retracted position and a second well bore gripping position, wherein gripping of the well by said second set of anchor members prevents further rotation of said mandrel.

26. The method of claim 25, wherein said mandrel has cam members thereon to drivingly engage respective ones of said second set of anchor members for moving them into said well gripping position thereof.